

SEQUENCE LISTING

<110> Innoventus Project AB

<120> An endogenous peptide, and active
subfragments thereof

<130> PD53577PC01

<150> SE0301988-2

<151> 2003-07-07

<150> US60/485,185

<151> 2003-07-07

<160> 28

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 35

<212> PRT

<213> human

<400> 1

Asp Leu His Pro His Lys His His Ser His Glu Gln His Pro His Gly
1 5 10 15

His His Pro His Ala His His Pro His Glu His Asp Thr His Arg Gln
20 25 30

His Pro His
35

<210> 2

<211> 151

<212> PRT

<213> human

<400> 2

His Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr
1 5 10 15

Thr Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro
20 25 30

His Lys Pro His Glu His Gly Pro Pro Pro Pro Asp Glu Arg Asp
35 40 45

His Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro
50 55 60

Met Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala
65 70 75 80

Gln Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys
85 90 95

His His Ser His Glu Gln His Pro His Gly His His Pro His Ala His
100 105 110

His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His
115 120 125

Pro His Gly His His Pro His Gly His His Pro His Gly His His Pro
130 135 140

His Gly His His Pro His Cys
145 150

<210> 3
<211> 507
<212> PRT
<213> human

<400> 3
Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
1 5 10 15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
20 25 30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
35 40 45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
50 55 60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65 70 75 80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
85 90 95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
100 105 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
115 120 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
130 135 140
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145 150 155 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
165 170 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
180 185 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
195 200 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
210 215 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225 230 235 240
Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
245 250 255
Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
260 265 270
Lys Pro His Glu His Gly Pro Pro Pro Pro Asp Glu Arg Asp His
275 280 285
Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
290 295 300
Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
305 310 315 320
Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys His
325 330 335
His Ser His Glu Gln His Pro His Gly His His Pro His Ala His His
340 345 350
Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His Pro
355 360 365
His Gly His His Pro His Gly His His Pro His Gly His His Pro His
370 375 380
Gly His His Pro His Cys His Asp Phe Gln Asp Tyr Gly Pro Cys Asp
385 390 395 400
Pro Pro Pro His Asn Gln Gly His Cys Cys His Gly His Gly Pro Pro
405 410 415
Pro Gly His Leu Arg Arg Gly Pro Gly Lys Gly Pro Arg Pro Phe

420	425	430
His Cys Arg Gln Ile Gly Ser Val Tyr Arg Leu Pro Pro Leu Arg Lys		
435	440	445
Gly Glu Val Leu Pro Leu Pro Glu Ala Asn Phe Pro Ser Phe Pro Leu		
450	455	460
Pro His His Lys His Pro Leu Lys Pro Asp Asn Gln Pro Phe Pro Gln		
465	470	475
Ser Val Ser Glu Ser Cys Pro Gly Lys Phe Lys Ser Gly Phe Pro Gln		
485	490	495
Val Ser Met Phe Phe Thr His Thr Phe Pro Lys		
500	505	

<210> 4
<211> 25
<212> PRT
<213> human

<400> 4
Gly His His Pro His Gly His His Pro His Gly His His Pro His Gly
1 5 10 15
His His Pro His Gly His His Pro His
20 25

<210> 5
<211> 25
<212> PRT
<213> human

<400> 5
His
1 5 10 15
His His His His His His His
20 25

<210> 6
<211> 240
<212> PRT
<213> human

<400> 6
Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
1 5 10 15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
20 25 30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
35 40 45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
50 55 60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65 70 75 80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
85 90 95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
100 105 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
115 120 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
130 135 140

Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
 145 150 155 160
 Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
 165 170 175
 Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
 180 185 190
 His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
 195 200 205
 Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
 210 215 220
 Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
 225 230 235 240

<210> 7
 <211> 320
 <212> PRT
 <213> human

<400> 7
 Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
 1 5 10 15
 Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
 20 25 30
 Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
 35 40 45
 Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
 50 55 60
 Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
 65 70 75 80
 Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
 85 90 95
 Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
 100 105 110
 Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
 115 120 125
 Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
 130 135 140
 Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
 145 150 155 160
 Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
 165 170 175
 Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
 180 185 190
 His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
 195 200 205
 Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
 210 215 220
 Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
 225 230 235 240
 Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
 245 250 255
 Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
 260 265 270
 Lys Pro His Glu His Gly Pro Pro Pro Pro Asp Glu Arg Asp His
 275 280 285
 Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
 290 295 300
 Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
 305 310 315 320

<210> 8
<211> 390
<212> PRT
<213> human

<400> 8
Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu Lys Ala
1 5 10 15
Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe Gln Leu
20 25 30
Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr Thr Val
35 40 45
Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val Leu Ser
50 55 60
Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg Pro Ser
65 70 75 80
Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His Ser His
85 90 95
Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr Ser Ser
100 105 110
Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu Ile Asp
115 120 125
Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys Ala Leu
130 135 140
Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg Val Asp
145 150 155 160
Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr Gly Tyr
165 170 175
Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe Pro Arg
180 185 190
His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr Asp Val
195 200 205
Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn Cys Glu
210 215 220
Val Phe Asp Pro Gln Glu His Glu Asn Ile Asn Gly Val Pro Pro His
225 230 235 240
Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr Thr
245 250 255
Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro His
260 265 270
Lys Pro His Glu His Gly Pro Pro Pro Pro Asp Glu Arg Asp His
275 280 285
Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro Met
290 295 300
Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala Gln
305 310 315 320
Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys His
325 330 335
His Ser His Glu Gln His Pro His Gly His His Pro His Ala His His
340 345 350
Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His Pro
355 360 365
His Gly His His Pro His Gly His His Pro His Gly His His His Pro His
370 375 380
Gly His His Pro His Cys
385 390

<210> 9
<211> 151
<212> PRT
<213> human

<400> 9
His Leu Gly His Pro Phe His Trp Gly Gly His Glu Arg Ser Ser Thr
1 5 10 15
Thr Lys Pro Pro Phe Lys Pro His Gly Ser Arg Asp His His His Pro
20 25 30
His Lys Pro His Glu His Gly Pro Pro Pro Pro Asp Glu Arg Asp
35 40 45
His Ser His Gly Pro Pro Leu Pro Gln Gly Pro Pro Pro Leu Leu Pro
50 55 60
Met Ser Cys Ser Ser Cys Gln His Ala Thr Phe Gly Thr Asn Gly Ala
65 70 75 80
Gln Arg His Ser His Asn Asn Asn Ser Ser Asp Leu His Pro His Lys
85 90 95
His His Ser His Glu Gln His Pro His Gly His His Pro His Ala His
100 105 110
His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly His His
115 120 125
Pro His Gly His His Pro His Gly His His Pro His Gly His His Pro
130 135 140
His Gly His His Pro His Cys
145 150

<210> 10
<211> 25
<212> PRT
<213> human

<400> 10
Cys His Asp Phe Gln Asp Tyr Gly Pro Cys Asp Pro Pro Pro His Asn
1 5 10 15
Gln Gly His Cys Cys His Gly His Gly
20 25

<210> 11
<211> 26
<212> PRT
<213> human

<400> 11
Gly Pro Pro Pro Gly His Leu Arg Arg Arg Gly Pro Gly Lys Gly Pro
1 5 10 15
Arg Pro Phe His Cys Arg Gln Ile Gly Ser
20 25

<210> 12
<211> 36
<212> PRT
<213> human

<400> 12
Val Tyr Arg Leu Pro Pro Leu Arg Lys Gly Glu Val Leu Pro Leu Pro
1 5 10 15
Glu Ala Asn Phe Pro Ser Phe Pro Leu Pro His His Lys His Pro Leu
20 25 30
Lys Pro Asp Asn
35

<210> 13
<211> 32
<212> PRT
<213> human

<400> 13
Gln Pro Phe Pro Gln Ser Val Ser Glu Ser Cys Pro Gly Lys Phe Lys
1 5 10 15
Ser Gly Phe Pro Gln Val Ser Met Phe Phe Thr His Thr Phe Pro Lys
20 25 30

<210> 14
<211> 525
<212> PRT
<213> human

<400> 14
Met Lys Ala Leu Ile Ala Ala Leu Leu Leu Ile Thr Leu Gln Tyr Ser
1 5 10 15
Cys Ala Val Ser Pro Thr Asp Cys Ser Ala Val Glu Pro Glu Ala Glu
20 25 30
Lys Ala Leu Asp Leu Ile Asn Lys Arg Arg Arg Asp Gly Tyr Leu Phe
35 40 45
Gln Leu Leu Arg Ile Ala Asp Ala His Leu Asp Arg Val Glu Asn Thr
50 55 60
Thr Val Tyr Tyr Leu Val Leu Asp Val Gln Glu Ser Asp Cys Ser Val
65 70 75 80
Leu Ser Arg Lys Tyr Trp Asn Asp Cys Glu Pro Pro Asp Ser Arg Arg
85 90 95
Pro Ser Glu Ile Val Ile Gly Gln Cys Lys Val Ile Ala Thr Arg His
100 105 110
Ser His Glu Ser Gln Asp Leu Arg Val Ile Asp Phe Asn Cys Thr Thr
115 120 125
Ser Ser Val Ser Ser Ala Leu Ala Asn Thr Lys Asp Ser Pro Val Leu
130 135 140
Ile Asp Phe Phe Glu Asp Thr Glu Arg Tyr Arg Lys Gln Ala Asn Lys
145 150 155 160
Ala Leu Glu Lys Tyr Lys Glu Glu Asn Asp Asp Phe Ala Ser Phe Arg
165 170 175
Val Asp Arg Ile Glu Arg Val Ala Arg Val Arg Gly Gly Glu Gly Thr
180 185 190
Gly Tyr Phe Val Asp Phe Ser Val Arg Asn Cys Pro Arg His His Phe
195 200 205
Pro Arg His Pro Asn Val Phe Gly Phe Cys Arg Ala Asp Leu Phe Tyr
210 215 220
Asp Val Glu Ala Leu Asp Leu Glu Ser Pro Lys Asn Leu Val Ile Asn

225	230	235	240												
Cys	Glu	Val	Phe	Asp	Pro	Gln	Glu	His	Glu	Asn	Ile	Asn	Gly	Val	Pro
			245				250				255				
Pro	His	Leu	Gly	His	Pro	Phe	His	Trp	Gly	Gly	His	Glu	Arg	Ser	Ser
			260				265				270				
Thr	Thr	Lys	Pro	Pro	Phe	Lys	Pro	His	Gly	Ser	Arg	Asp	His	His	His
		275				280				285					
Pro	His	Lys	Pro	His	Glu	His	Gly	Pro	Pro	Pro	Pro	Asp	Glu	Arg	
		290			295			300							
Asp	His	Ser	His	Gly	Pro	Pro	Leu	Pro	Gln	Gly	Pro	Pro	Pro	Leu	Leu
		305			310			315						320	
Pro	Met	Ser	Cys	Ser	Ser	Cys	Gln	His	Ala	Thr	Phe	Gly	Thr	Asn	Gly
			325				330						335		
Ala	Gln	Arg	His	Ser	His	Asn	Asn	Asn	Ser	Ser	Asp	Leu	His	Pro	His
		340				345						350			
Lys	His	His	Ser	His	Glu	Gln	His	Pro	His	Gly	His	His	Pro	His	Ala
		355				360					365				
His	His	Pro	His	Glu	His	Asp	Thr	His	Arg	Gln	His	Pro	His	Gly	His
		370				375				380					
His	Pro	His	Gly	His	His	Pro	His	Gly	His	His	Pro	His	Gly	His	His
		385				390				395				400	
Pro	His	Gly	His	His	Pro	His	Cys	His	Asp	Phe	Gln	Asp	Tyr	Gly	Pro
			405				410						415		
Cys	Asp	Pro	Pro	Pro	His	Asn	Gln	Gly	His	Cys	Cys	His	Gly	His	Gly
			420				425						430		
Pro	Pro	Pro	Gly	His	Leu	Arg	Arg	Arg	Gly	Pro	Gly	Lys	Gly	Pro	Arg
			435			440						445			
Pro	Phe	His	Cys	Arg	Gln	Ile	Gly	Ser	Val	Tyr	Arg	Leu	Pro	Pro	Leu
			450			455					460				
Arg	Lys	Gly	Glu	Val	Leu	Pro	Leu	Pro	Glu	Ala	Asn	Phe	Pro	Ser	Phe
			465			470					475				480
Pro	Leu	Pro	His	His	Lys	His	Pro	Leu	Lys	Pro	Asp	Asn	Gln	Pro	Phe
				485				490						495	
Pro	Gln	Ser	Val	Ser	Glu	Ser	Cys	Pro	Gly	Lys	Phe	Lys	Ser	Gly	Phe
			500				505						510		
Pro	Gln	Val	Ser	Met	Phe	Phe	Thr	His	Thr	Phe	Pro	Lys			
			515				520					525			

<210> 15

<211> 16

<212> PRT

<213> human

<400> 15

Asp Leu His Pro His Lys His Ser His Glu Gln His Pro His Gly
1 5 10 15

<210> 16
<211> 26
<212> PRT
<213> human

<220>
<223> additional G residue (residue 16) not part of
human HRGP

<400> 16
Lys His His Ser His Glu Gln His Pro His Gly His His Pro His Ala
1 5 10 15
His His Pro His Glu His Asp Thr His Gly
20 25

<210> 17
<211> 25
<212> PRT
<213> human

<400> 17
Lys His His Ser His Glu Gln His Pro His Gly His His Pro His Ala
1 5 10 15
His His Pro His Glu His Asp Thr His
20 25

<210> 18
<211> 16
<212> PRT
<213> human

<400> 18
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His Gly
1 5 10 15

<210> 19
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Non-consecutive fragment residues 330-334,
340-344, 355-359 of human HRGP + additional
residue G (residue 16) in C terminal

<400> 19
Asp Leu His Pro His Glu Gln His Pro His Glu His Asp Thr His Gly
1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Sequence comprises residues 330-334, 340-344,
355-359 of mature human HRGP

<400> 20
Asp Leu His Pro His Glu Gln His Pro His Glu His Asp Thr His
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (15)...(15)

<400> 21
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His
1 5 10 15

<210> 22
<211> 15
<212> PRT
<213> human

<400> 22
Ala His His Pro His Glu His Asp Thr His Arg Gln His Pro His
1 5 10 15

<210> 23
<211> 10
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (10)...(10)

<400> 23
Ala His His Pro His Glu His Asp Thr His
1 5 10

<210> 24
<211> 10
<212> PRT
<213> human

<400> 24
Ala His His Pro His Glu His Asp Thr His
1 5 10

<210> 25
<211> 5
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (5)...(5)

<400> 25
Ala His His Pro His
1 5

<210> 26
<211> 5
<212> PRT
<213> human

<400> 26
Ala His His Pro His
1 5

<210> 27
<211> 5
<212> PRT
<213> human

<220>
<221> ACETYLATION
<222> (1)...(1)

<221> AMIDATION
<222> (5)...(5)

<400> 27
Glu His Asp Thr His
1 5

<210> 28
<211> 5
<212> PRT
<213> human

<400> 28
Glu His Asp Thr His
1 5